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ABSTRACT

The graduation and attrition patterns of black students at North Carolina State University are reported in an effort to provide data pertinent to minority students. Black students were identified after 1969 by means of an ethnic card completed during the registration process. The report is based on all black students (N=80) who entered NCSU as new freshmen in the fall of 1969 and 1970. Verbal and math scores from the Scholastic Aptitude Tests, converted high school rank, and grade-point average (GPA) at the end of the first academic year were collected for each student. By using the prediction equations in effect during this year of application, a predicted grade-average was computed for each student according to the school he entered. Grade reports were reviewed to determine whether a student had been suspended, withdrew, graduated, or whether he was still enrolled from the time of entry through the spring of 1974. The report shows that SAT and high school rank, when used alone, were not good predictors of performance for this group. When used together in certain combinations to form the predicted grade average, their ability to indicate success was improved. First year GPA appears to be a good measure of eventual success for black students. In fact, black students in this study had a probability of graduation that was at least as high as other students with the same first-year GPA. (JMF)

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GRADUATION AND ATTRITION OF BLACK STUDENTS
AT NORTH CAROLINA STATE UNIVERSITY

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GRADUATION AND ATTRITION OF BLACK STUDENTS
AT NORTH CAROLINA STATE UNIVERSITY

In a continuing effort to provide reliable data pertinent to minority students at North Carolina State University, the following report on graduation and attrition patterns of black students has been prepared.

Method

Prior to fall, 1969 no reliable method of identifying new freshmen entering North Carolina State University by ethnic background was available. Beginning that fall, students were asked to identify their race by completing an ethnic card during the registration process. Thus, black students admitted before 1969 who were still enrolled in the fall of 1969 could be identified, but since a large proportion of withdrawals occur during the first years of study, no accurate analysis of attrition can be made for students who entered prior to that time.

This report is based on all black students (N=80) who entered NCSU as new freshmen in the fall of 1969 and 1970. Verbal and math scores from the Scholastic Aptitude Test (SATV and SATM), converted high school rank (CHSR), and grade-point average (GPA) at the end of the first academic year were collected for each student. Using the prediction equations in effect during his year of application, a predicted grade average (PGA) was computed for each student according to the school he entered.

Grade reports were reviewed to determine whether a student had been suspended, withdrew, graduated, or whether he was still enrolled from the time of entry through the spring of 1974. Thus, a five-year analysis of graduation and attrition patterns can be completed for the 1969 group while the 1970 group is followed for four years.

Results

In Table 1, the mean and standard deviation of each variable are shown for each entering group, for the two groups combined, and also for all new freshmen entering fall, 1970. The 1969 black group had a higher mean GPA (2.04) at the end of the first year of study and a slightly higher mean CHSR (64.1) than the 1970 black group (mean GPA = 1.83; mean CHSR = 63.1), but the mean SATV and SATM were lower for the 1969 group. The two groups as a whole had a mean first-year GPA of 1.94, lower than the mean GPA (2.21) for all new freshmen in fall of 1970. The mean CHSR for total black students in this study (63.6) was higher than the mean CHSR for all fall, 1970 regular freshmen (60.6). The mean SATV and SATM were lower for black students than for all new freshmen in 1970, which were 50.8 and 57.9 respectively.

TABLE 1

MEAN FIRST-YEAR GPA, CHSR, AND SAT SCORES
FOR BLACK NEW FRESHMEN ENTERING NCSU FALL 1969 AND 1970
AND FOR ALL NEW FRESHMEN ENTERING FALL 1970

	Black New Freshmen			All New Freshmen
	Fall '69 N = 40	Fall '70 N = 40	Total N = 80	Fall 1970 N = 2160
<u>1st. Year GPA:</u>				
Mean	2.04	1.83	1.94	2.21
Standard dev.	.66	.69	.68	.75
<u>CHSR</u>				
Mean	64.1	63.1	63.6	60.6
Standard dev.	5.77	8.34	7.11	7.32
<u>SATV</u>				
Mean	41.8	43.2	42.5	50.8
Standard dev.	6.97	7.68	7.32	8.38
<u>SATM</u>				
Mean	47.0	48.4	47.7	57.9
Standard dev.	8.41	9.53	8.95	7.94

Table 2 shows cumulative graduation and attrition rates for black students by year of study. For example, for the fall, 1969 group, by the end of the second year, 10.0 percent had been suspended, 7.5 percent had withdrawn, and 82.5 percent were still enrolled. These percentages include all suspensions and withdrawals for the first and second years. Thus, at the end of five years, 15.0 percent of those beginning as new freshmen in the fall of 1969 had been suspended, 15.0 percent had withdrawn, 65.0 percent had graduated, and 5.0 percent were still enrolled at the university.

The 1970 group had a higher rate of attrition than the previous group. At the end of four years, 37.5 percent had withdrawn or had been suspended as compared to 27.5 percent for the 1969 group after four years. Only 45.0 percent of the 1970 group had graduated after four years, compared to 52.5 percent of the 1969 group.

For the total group, 48.8 percent had graduated at the end of four years of study. In a recent study done by this office, it was found that in a random sample of 357 freshmen who entered NCSU in 1965, 41.2 percent had

graduated after four years of study, and after five years 51.5 percent had received their degrees¹. Thus using the 1965 group as a norm, a higher proportion of entering black freshmen graduate after four years than the average NCSU entering freshmen.

TABLE 2

CUMULATIVE GRADUATION AND ATTRITION PATTERNS OF NCSU
BLACK FRESHMEN ENTERING IN FALL 1969 AND 1970

	Year of Entry		Total N = 80
	Fall 1969 N = 40	Fall 1970 N = 40	
End of first year:			
Suspended	5.0%	7.5%	6.2%
Withdrawn	5.0	7.5	6.2
Still enrolled	90.0	85.0	87.5
End of second year:			
Suspended	10.0	12.5	11.2
Withdrawn	7.5	10.0	8.8
Still enrolled	82.5	77.5	80.0
End of third year:			
Suspended	10.0	15.0	12.5
Withdrawn	10.0	17.5	13.8
Still enrolled	80.0	67.5	73.8
End of fourth year:			
Suspended	15.0	20.0	17.5
Withdrawn	12.5	17.5	15.0
Graduated	52.5	45.0	48.8
Still enrolled	20.0	17.5	18.0
End of fifth year:			
Suspended	15.0		
Withdrawn	15.0		
Graduated	65.0		
Still enrolled	5.0		

Table 3 shows attrition and graduation rates for the total group after four years of study by intervals on each of the three variables used to predict academic performance - CHSR, SATV, and SATM. Of those students with a CHSR of

¹Kathryn A. Council, "Attrition: A Campus Profile" (Student Affairs Research Office, North Carolina State University, 1972), p.5.

70-80, only 38.5 percent graduated, and the same proportion were suspended or withdrew. Approximately one-fourth (23.1 percent) were still enrolled after four years. The majority of the black students had a CHSR between 60 and 69, and 55.1 percent of these graduated in four years. Students whose CHSR was in the interval 50-59 were almost as likely to graduate in four years (35.7 percent) as those with the highest CHSR's. This indicates that for black students who entered in 1969 and 1970, a high rank in their high school graduating class was not a good indication of probable success (i.e., graduation).

TABLE 3

DISTRIBUTION OF GRADUATED, WITHDRAWN/SUSPENDED, AND STILL ENROLLED BLACK STUDENTS ENTERING FALL 1969 AND 1970 AFTER FOUR YEARS OF STUDY, BY CHSR AND SAT SCORES

	# of Students	% Graduated	% Withdrawn/ Suspended	% Still Enrolled
<u>CHSR</u>				
70-80	13	38.5	38.5	23.1
60-69	49	55.1	26.5	18.4
50-59	14	35.7	42.9	21.4
40-49	2	100.0	-	-
30-39	-	-	-	-
20-29	-	-	-	-
Private H.S.	2	-	100.0	-
Total	80	48.8	32.5	18.8
<u>SATV</u>				
70-80	-	-	-	-
60-69	1	-	100.0	-
50-59	9	66.7	33.3	-
40-49	42	47.6	33.3	19.0
30-39	26	46.2	30.8	23.1
20-29	2	50.0	-	50.0
<u>SATM</u>				
70-80	-	-	-	-
60-69	9	55.6	11.1	33.3
50-59	22	36.4	59.1	4.5
40-49	36	52.8	27.8	19.4
30-39	10	60.0	20.0	20.0
20-29	3	33.3	-	66.6

For SATV, the proportion graduating with SATV's in the interval 50 to 59 was 66.7 percent. In the lower intervals, 20-49, this proportion remains relatively stable (46.2 - 50.0 percent). Approximately one-third of the

students in each of the intervals, 50-59, 40-49, and 30-39 were suspended or withdrew. A low SATV does not indicate that a black student will leave the university without graduating.

Similarly, there does not appear to be a definite relationship between SATM and eventual graduation. The SATM interval with the highest proportion graduating (60.0 percent) was 30 - 39. The 50-59 interval had one of the smallest proportions to graduate and the highest proportion to withdraw or be suspended. Like SATV, SATM was not a good indicator of eventual success for these black students.

Table 3 has shown that when used alone, neither SAT scores nor CHSR adequately determine whether a black student will eventually graduate. However, any student's acceptance to NCSU is dependent on a combination of these three variables which predicts a student's first-year GPA. This predicted grade average, PGA, determines whether or not a student will be admitted to the university. An analysis of the adequacy of the PGA as a criterion for admission is shown in Table 4. The graduation and attrition patterns for the 1969 and 1970 black students after four years at the university are shown by PGA interval.

Students in the highest PGA category (2.5 - 2.99) had the lowest graduation rate (30.0 percent) while those in the lowest category (less than 1.6) had the highest proportion to graduate (76.9 percent). A little over half (52.9 percent) of the students whose PGA was between 2.0 and 2.49 had graduated after four years. Those in the 1.6 - 1.99 category had equal proportions graduated and withdrawn/suspended, but 30.4 percent of these students were still enrolled after four years. It appears from Table 4 that the PGA overpredicted graduation for highest ability black students, and underpredicted for students with lowest ability.

TABLE 4

DISTRIBUTION OF GRADUATED, WITHDRAWN/SUSPENDED, AND
STILL ENROLLED BLACK FRESHMEN ENTERING FALL 1969 AND 1970
AFTER FOUR YEARS OF STUDY, BY PREDICTED GRADE AVERAGE

PGA	# of Students	% Graduating	% Withdrawn/ Suspended	% Still Enrolled
3.0 - 4.0	0	-	-	-
2.5 - 2.99	10	30.0	60.0	10.0
2.0 - 2.49	34	52.9	29.4	17.6
1.6 - 1.99	23	34.8	34.8	30.4
<1.6	13	76.9	15.4	7.7

Table 5 presents the four year graduation and attrition patterns for the 1969 and 1970 black students by first year GPA. Of those students whose first-year GPA was 3.0 or above, all either graduated or were still enrolled after four years. In the previous study of 1965 entering freshmen, 87.5 percent in the 3.5 - 4.00 GPA category and 91.3 percent in the 3.0 - 3.49 category had graduated after six years. For black students with first-year GPA from 2.5 to 2.99, 80.0 percent had graduated after four years and 20.0 percent had withdrawn or been suspended. The corresponding figures for the 1965 group after six years are 82.0 percent and 18.0 percent respectively. Thus, black students whose first year GPA is 2.5 and above are at least as likely to graduate as all other students with the same first-year GPA.

TABLE 5

DISTRIBUTION OF GRADUATED, WITHDRAWN/SUSPENDED, AND STILL ENROLLED BLACK FRESHMEN ENTERING FALL 1969 AND 1970 AFTER FOUR YEARS OF STUDY, BY FIRST-YEAR GRADE POINT AVERAGE

1st. Year GPA	# of Students	% Graduating	% Withdrawn/Suspended	% Still Enrolled
3.5 - 4.0	0	-	-	-
3.0 - 3.49	8	87.5	-	12.5
2.5 - 2.99	10	80.0	20.0	-
2.0 - 2.49	18	55.6	16.7	27.8
1.6 - 1.99	17	58.8	29.4	11.8
0.0 - 1.59	26	15.4	57.7	26.9

Black students in the range 2.0 - 2.49 take longer to graduate than students in other GPA categories. Although 55.6 percent of these students graduated in the usual four years, another 27.8 percent were still enrolled. Of the 1965 students, 75.6 percent with GPA between 2.0 and 2.49 graduated after six years. The most striking difference between black students in this study and students in the 1965 study occurs in the 1.6 - 1.99 category. After only four years, 58.8 percent of the black students had graduated, while of the 1965 students 47.8 percent had graduated after six years. In the lowest GPA category (0.0 - 1.59), 15.4 percent of the black students had graduated after four years, 57.7 percent had been suspended or withdrew, and 26.9 percent were still enrolled. For the 1965 group, 20.8 percent had graduated after six years and 76.8 percent had been suspended or withdrew².

²*Ibid.*, p. 15.

Table 5 indicates that for black students, first-year GPA is a good measure of eventual graduation. It has also indicated that black students are just as likely to graduate as other students with the same first year GPA, and in the case of those in the 1.6 - 1.99 GPA category, this probability is much greater.

Concluding Remarks

The preceeding report has shown that for black students in this study, scores on the SAT and high school rank, when used alone, were not good predictors of performance. When used together in certain combinations to form the predicted grade average (PGA), their ability to indicate success was improved, but for lower ability students, this prediction tended to underestimate performance level.

First year GPA appears to be a good measure of eventual success for black students. In fact, black students in this study had a probability of graduation which was at least as high as other students with the same first-year GPA. This raises the question as to whether the cut-off point for admission to the university should be lower for black students. Subsequent studies analyzing this question for more recently enrolled black students are currently being prepared by this office to insure that all students be given equal opportunity to perform based on their own potential and abilities.